

# PROCESS FOR STORING AND RELEASING PROTEIN-DECORATED NANOPARTICLES ON PAPER SUBSTRATES

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## HIGHLIGHTS

- ✓ The paper biosensor has a long lifetime, is modular and economical to manufacture.
- ✓ Paper biosensor can detect analytes in complex matrices

## TECH STATUS

- ✓ TRL5
- ✓ PATENT Priority numbers: P201930784
- ✓ Priority date: 09 September 2019

## Problem to be solved

The present innovation presents an analytical device on 3D paper which allows the detection of a large number of molecules in record time.

## Background and Technology

Lateral flow immunosensors are currently performed on 2D rigid arrays, which have many limitations in terms of performance, due to the severe limitations that occur when trying to store reagents such as nanoparticles. This technology developed by our research team has developed and patented a 3D array which solves all the limitations for these 2D lateral flow immunosensors. This new technology allows to reduce the cost of manufacturing, to be modular and also allows a very fast analysis of which you can have a result with just a smartphone, with an own app that is also developed.

## Applications

The main application of this technology is that, due to all the advantages it has over the current way of acting, being faster, cheaper, simpler to use and above all modular, it is the new technique in different fields to be able to analyse any sample and obtain very complete results.

## Technology status

In the health field we have different prototypes where one of them is able to detect E.Coli in urine samples in less than 7 minutes.

### Patent Application number:

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**Title:** Process for storing and releasing protein-decorated nanoparticles on paper substrates

**Collaboration between two applicants:** Institut d'investigació Sanitaria de les Illes Balears and Universitat de les Illes Balears.

## **Market Opportunity**

The patent was licensed to NanodecalDx, the first Spin Off from IdISBa in 2022.